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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,862	09/15/2003	Makoto Nagashima	GSN001	2141

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EXAMINER

VERSTEEG, STEVEN H

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/662,862	Applicant(s) NAGASHIMA ET AL.	
	Examiner Steven H. VerSteeg	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9, 14 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7, 8, 16 and 19 is/are rejected.
- 7) ☒ Claim(s) 3-6, 10-13, 15, 17 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/16/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Information Disclosure Statement

1. The IDS filed January 16, 2005 has been considered. The search report is from a different corresponding US application. None of the “Y” references read upon the instant application. Shi et al. (Shi) and Kubo et al. (Kubo) are the most relevant art because they are cited as “Y” references against claims containing the heater above the substrate and swinging the wafer on a pendulum. Shi does disclose a heater for a wafer substrate, but it is not in a facing targets sputtering device and there is no motivation to place the heater in a facing targets sputtering device. Kubo does not have a swinging motion required by claim 16.
2. Please take the time to completely fill out the IDS in the future. It is YOUR job, not mine, to completely fill out the form. Merely inserting the patent number and expecting me to insert the name of the applicant is not correct. YOU are the one citing the references, not me, so make sure YOU are the one to fill out the form, not me. It is my job to completely fill out the 892 form. It is YOUR job to fill out the 1449 form. Next time, I won't do your work for you. I will simply cross out all references and mail it back to you.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **541** and **543**. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application

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must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-3, 7, 8, 16, 17, and 19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-7, and 18-20 of copending Application No. 10/662,863. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter of the instant claims are fully present in the claims of the co-pending application.

6. I will cite the limitations and the locations in the claims of the co-pending application where they can be found.

7. For claim 1, Applicant requires a facing targets sputtering device (claim 2) for semiconductor fabrication (claim 1) comprising an air-tight chamber in which an inert gas is admittable and exhaustible (claim 1, lines 2-3); a pair of target plates placed at opposite ends of

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the chamber so as to face each other and form a plasma region (claim 3, lines 3-5); a pair of magnets respectively disposed adjacent to the target plates such that magnet poles of different polarities face each other across the plasma region thereby to establish a magnetic field of the plasma region between the target plates (claim 3, lines 6-10); a substrate holder disposed adjacent to the plasma region adapted to hold a substrate on which an alloyed thin film is to be deposited (claim 3, l. 11-13); a chuck heater mounted above the wafer (claim 7); and a back-bias power supply coupled to the substrate holder (claim 3, line 14).

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the chuck heater taught in claim 7 in the facing targets sputtering device as claimed in claim 3 because of the fact that they are both variations on facing targets sputtering devices.

9. For claim 2, Applicant requires the back-bias power supply to be a DC or an AC electric power source. Claim 4 of the co-pending application fully encompasses the limitations.

10. For claim 7, Applicant requires a robot arm to move the wafer. Claim 5 of the co-pending application fully encompasses the limitations.

11. For claim 8, Applicant requires a magnetron coupled to the chamber. Claim 6 of the co-pending application fully encompasses the limitations.

12. For claim 16, Applicant requires a method for sputtering a thin film onto a substrate comprising providing at least one target and a substrate having a film-forming surface portion and a back portion; creating a magnetic field so that the film-forming surface portion is placed in the magnetic field with the magnetic field induced normal to the substrate surface portion; back-biasing the back portion of the substrate; swinging the wafer using a pendulum; and sputtering

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material onto the film-forming surface portion. Claim 19 of the co-pending application fully encompasses the limitations.

13. For claim 19, Applicant requires supporting a chuck from underneath rather than sideways. Claim 20 of the co-pending application recites the limitations.

14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of claim 19 of the co-pending application with the limitations of claim 20 because of the fact that they are both variations on facing targets sputtering devices.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

15. Based upon MPEP 1490, it appears that either application could be considered the base application and either application could be considered the improvement application. Thus, it appears to me that MPEP 1490 applies and a provisional double patenting rejection is proper even though it is the only rejection remaining.

Response to Amendment

16. The objection to the drawings presented in the office action mailed January 12, 2005 is withdrawn to an extent, but stands as noted above. Item numbers 541 and 543 are listed on page 12 at line 14 where it is stated that a "plurality of sources 540-544" are present. Regarding item 33 it was an error on my part to include it in the original objection.

17. The claim objections presented in the office action mailed January 12, 2005 are withdrawn in light of the amendment.

18. The 112-second paragraph rejections presented in the office action mailed January 12, 2005 are withdrawn in light of the amendment.

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19. The 102(e) rejection over Takahashi presented in the office action mailed January 12, 2005 is withdrawn in light of the amendment.

20. The 103(a) rejection of claim 12 over Takahashi and Manley presented in the office action mailed January 12, 2005 is withdrawn in light of the amendment.

21. Please note that claims 9, 14, and 18 are listed as "withdrawn" and will need to be canceled in order to pass the case to issue.

Allowable Subject Matter

22. Claims 3-6, 10-13, 15, 17, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

General Information

For general status inquiries on applications not having received a first action on the merits, please contact the Technology Center 1700 receptionist at (571) 272-1700.

For inquiries involving Recovery of lost papers & cases, sending out missing papers, resetting shortened statutory periods, or for restarting the shortened statutory period for response, please contact Denis Boyd at (571) 272-0992.

For general inquiries such as fees, hours of operation, and employee location, please contact the Technology Center 1700 receptionist at (571) 272-1300.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. VerSteeg whose telephone number is (571) 272-1348. The examiner can normally be reached on Mon - Thurs (6:30 AM - 5:00 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven H VerSteeg
Primary Examiner
Art Unit 1753

shv
April 26, 2005